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# **Model No. ST300-S/SM and ST300-S/SM-T**

**SLOW MOTION CONTROLLER**

**USER MANUAL**

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## 1. DESCRIPTION

Slow Motion Controller that you can configure for the way you work.

Controls up to 4 VTRs

T-BAR or detented Wheel for Fast and Easy slomo-ing:  
0-200% or -100% to + 200% of Play speed.

Quickly and easily store and recall 400 Cue Points - 100 per VTR  
All Cue Points are retained when power is off.

Fast and Easy to search to a Cue Point, manually entered Timecode number  
or Record out Point.

Set Preroll duration from one frame to one hour.

## DEFINITIONS

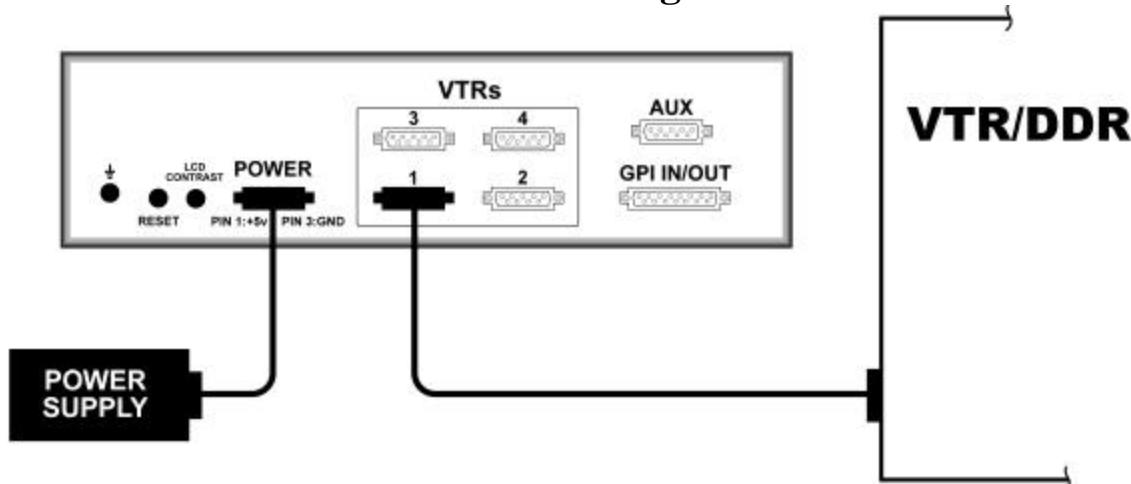
- ❑ Throughout this document VTR, DDR, VDR & Video Server will be referred to collectively as "VTR".
- ❑ The ST300-S/SM as the ST300.
- ❑ Words surrounded by brackets, for example, [**ENTER**], are keys on the ST 300.
- ❑ **[XXX] + [XXX]** means hold the two keys down simultaneously.

## GETTING STARTED . . .

### 2. INSTALLATION

1. Plug one end of a 9 conductor, RS422 serial cable in to the 9 pin connector on the rear of the SLOW MOTION CONTROLLER. Plug the other end of the cable into the 9 pin remote connector on the VTR.
2. Plug the POWER SUPPLY into a wall outlet, 90 VAC TO 240 VAC.
3. Select REMOTE mode on the VTR's front panel.
4. Check the **SETUP MENU** prior to using the Slow Motion Controller to confirm proper Record mode, SLO-MO speed range, and other User settable modes.

### Connection Diagram



Note: The Reference Video connector is not programmed in this model.

## **LCD DISPLAY**

During normal operation, the top row of the display shows the selected time mode and current time location of the selected VTR.

For example: TM 01:12:09:23

Time Modes - TM= Tape Timer TC= LTC VT= VITC

The currently selected SLO-MO speed is displayed on the far right side of the top row.

The bottom row of the display shows the current Cue Point number and its contents.

## **3. OPERATION**

Select the desired transport function by pressing the appropriate switch on the SLOW MOTION CONTROLLER.

The Real-Time Status Indicators will light to indicate the VTR's current tape transport mode.

For example: Pressing [PLAY] will put the VTR into the PLAY mode.

The PLAY Status Indicator will turn on when the VTR is in PLAY mode.

Press [RECORD] OR [RECORD] + [PLAY]

to put the VTR into Record mode. (see SETUP MENU)

**NOTE:** The VTR will not go into Record mode if "Record Inhibit" is enabled on the VTR or tape cassette.

Check SETUP MENU prior to using the SLOW MOTION CONTROLLER to confirm proper Record mode and other User settable modes.

## **CUE POINTS**

### **SELECT A CUE POINT**

1. Press [NEXT CUE] or [LAST CUE] to step through the Cue Points  
**OR**  
Manually enter the desired Cue Point number using the numeric keypad.
2. The current Cue Point number and its contents will be shown on the second line of the display.

### **MARK/ENTER/EDIT A CUE POINT**

1. Press [MARK] to mark the VTR's time into the Cue Point.  
You are done.  
**OR**
2. Press [ENTER TIME] to manually enter a time using the numeric keypad.  
The ENTER TIME key indicator will turn on.
3. Manually enter a time on the numeric keypad.  
Press [ENTER] to save the entered time.  
**OR**
4. Press [ESC] to exit without saving.  
The ENTER TIME key indicator will turn off.

## **GOTO/PREROLL TO A CUE POINT**

1. Select the desired Cue Point.  
The Cue number and its contents are shown on the bottom line of the display.
2. Press **[GOTO]** to search to the Cue Point; the GOTO key indicator will turn on.  
When the VTR reaches the Cue Point time, the GOTO key indicator will turn off.
3. Press **[PREROLL]** to preroll to the Cue Point.  
The PREROLL key indicator will turn on.  
  
When the VTR reaches the Cue Point time,  
the PREROLL key indicator will turn off.

## **GOTO/PREROLL TO A MANUALLY ENTERRED TIME**

1. Press **[ENTER TIME]** to manually enter a time using the numeric keypad. The ENTER TIME key indicator will turn on.
2. Manually enter a time on the numeric keypad.
3. Press **[GOTO]** OR **[PREROLL]** to search to the entered time  
**OR**
4. Press **[ESC]** to exit without searching.  
The ENTER TIME key indicator will turn off.

## **RECORD MODE SELECTION**

1. Press **[MENU]**. The MENU key indicator will turn on.
2. Turn the wheel until “REC” is viewed on the top line of the display.  
The current Record mode is shown.
3. Press the **[MENU]** key to select:  
**Record Lockout, Assemble, Crash or Insert** Record mode.
4. **INSERT ONLY** - Press the desired Softkey to toggle  
Video, Audio1, Audio2, Audio3 or Audio4 record on/off.  
  
The **Softkeys** are located just below the display.  
Follow the line graphic from the bottom of the display to the Softkey.
5. Press **[ESC]** to exit the MENU. The MENU key indicator will turn off  
**OR**  
Turn the Wheel to for other setup options.

## **4. SETUP MENU**

1. Press **[MENU]**. The MENU key indicator will turn on.  
Turn the Wheel to select item to change.
2. Use the Softkeys to change the desired mode for that option.  
Turn Wheel at any time to select another item.
3. Press **[ESC]** at any time exit **SETUP MENU**.  
The MENU key indicator will turn off.

**MODES:** (Turning Wheel clockwise)

<b>RECORD</b>	Press [MENU] key to Select the desired record mode: Lockout, Assemble, Crash (Full) or Insert.							
	<u>Only in INSERT mode:</u> Press the associated Softkey, located below the display, to toggle Video(V), Audio1(A1), Audio2(A2), Audio3(A3), Audio4(A4) on/off.							
<b>MARK-Q</b>	Press Softkey to: Enable ADVANCE to next Cue Point, when MARK is pressed <b>OR</b> maintain CURRENT Cue Point when MARK is pressed.							
<b>WIND MODE</b>	Press Softkey to select: <b>HOLD</b> (fast wind is maintained only while key is pressed) <b>OR</b> <b>LATCH</b> (fast wind is initiated and maintained with momentary key press) Select fast wind speed (3.9 to 23.7) by pressing Softkey below SPD.							
<b>SLOMO WITH</b>	ST300 display shows (Non T-Bar version):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">SLOMO with:</td> <td style="padding: 2px;">WHEEL</td> </tr> <tr> <td style="padding: 2px;"><b>SpdRange</b></td> <td style="padding: 2px;"><b>Preset</b></td> </tr> </table>	SLOMO with:	WHEEL	<b>SpdRange</b>	<b>Preset</b>		
SLOMO with:	WHEEL							
<b>SpdRange</b>	<b>Preset</b>							
	ST300 display shows (T-Bar version):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">SLOMO with:</td> <td style="padding: 2px;">TBAR</td> </tr> <tr> <td style="padding: 2px;"><b>Wheel</b></td> <td style="padding: 2px;"><b>SpdRange</b></td> </tr> <tr> <td style="padding: 2px;"><b>Preset</b></td> <td></td> </tr> </table>	SLOMO with:	TBAR	<b>Wheel</b>	<b>SpdRange</b>	<b>Preset</b>	
SLOMO with:	TBAR							
<b>Wheel</b>	<b>SpdRange</b>							
<b>Preset</b>								
	Press Softkey [ <b>TBAR</b> ] (or [ <b>WHEEL</b> ]) to toggle between T-BAR and WHEEL.							
	The T-BAR has two speed ranges: 0 → +200 with a detent at +100 % play speed <b>OR</b> 0 → +100 with a detent at +100%							
<b>For Wheel only:</b>								
Press Softkey [ <b>SPDRANGE</b> ] to select SLOMO speed ranges:								
Press Softkey to select: 0 ->+200 <b>OR</b> -100 -> +200.								
Press Softkey [ <b>BACK</b> ] to return to SLOMO MENU.								
Press [ <b>ESC</b> ] to exit SETUP MENU								
<b>OR</b> turn the wheel to select another item.								
<b>For Wheel only:</b>								
Press Softkey [ <b>PRSET</b> ] to select the SLOMO Preset Speed Mode								
Press Softkey [ <b>UPDATE</b> ]								
When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.								
Press Softkey [ <b>STATIC</b> ]								
The Preset Speed register is NOT updated when exiting SLOMO mode								
It is only changed by [ <b>SHIFT</b> ] + [ <b>SLOMO</b> ] (PRESET SLOMO).								

<b>TBAR</b>	Press Softkey [ <i>ON</i> ] to enable slomo to be engaged by moving the TBAR
<b>AUTOENABLE</b>	
<b>WHEEL</b>	Press Softkey [ <i>JOG</i> ] or [ <i>SHUTTLE</i> ] to enable that function to be engaged
<b>AUTOENABLE</b>	by turning the wheel
<b>GANG MODE</b>	Press Softkey to select PERMANENT GANG (described in the FUNCTION Table) or TEMPORARY GANG. In TEMPORARY mode, press and hold the VTR key that you want to read status from, then press the VTR#s of those VTRs that you want to include in the gang. Release the keys. The LED on the monitored VTR blinks, all other VTRs in the gang stay on constantly. To break the temporary gang, press any VTR# key.
<b>SEARCH SPEED</b>	Press Softkey to select ST300 or VTR to control the search speed of the VTR.  Either the ST300 or VTR mode will be faster. HINT: Select VTR mode if you will be controlling multiple VTRs. Select ST300 if you will be controlling older VTRs
<b>ST300 SETUP</b>	<div style="border: 1px solid black; padding: 10px;"> <p>ST300 SETUP</p> <p>Clear Cues                      SetDefault</p> </div> <p>Press Softkey beneath ClearCues to clear all Cue Points to 00:00:00:00. Press Softkey [<i>YES</i>] when asked “Are You Sure?” Press Softkey beneath SetDefault to set ST300 to default settings. Press Softkey [<i>YES</i>] when asked “Are You Sure?”</p>
<b>DISPLAY SOFTWARE</b>	The version number for the currently installed software is
<b>VERSION</b>	displayed.
<b>DROP FRAME</b>	Press Softkey to select DROP FRAME ON or OFF. Used in conjunction with Timecode Generator preset.
<b>RECORD</b>	Press Softkey to select single button or 2 button record. RECORD = [ <b>REC</b> ] Only <b>OR</b> RECORD = [ <b>REC</b> ] + [ <b>PLAY</b> ]
<b>FREEZE</b>	Press Softkey to enable or disable FREEZE at Record Outpoint. Changing mode automatically clears FREEZE point.
<b>TRANSMIT CUELIST</b>	Transmits Cuelist to another ST300 or to a PC
<b>RECEIVE CUELIST</b>	Receives Cuelist from another ST300 or a PC

## 5. FUNCTION TABLE

Function	Key Press	Description
EE On/Off	[EE]	Toggle EE mode on/off. Status indicator is on when EE is on.
ENTER TIME	[ENTER TIME]	To manually enter timecode numbers into the currently displayed Cue Point. Enter the desired timecode number using the numeric keypad. Press [ENTER] to save your entry <b>OR</b> [ESC] to exit without saving.  To enter a GOTO location without altering the contents of the Cue Point, enter the desired timecode number using the numeric keypad. Press [GOTO] to search to the entered time. Press [ESC] to exit without searching.
FREEZE ENABLE	[FREEZE]	Toggles the Freeze on/off. When the light is ON, the Freeze is enabled. When the light is OFF, the freeze is disabled. NOTE: this is <u>NOT</u> a REC OUT freeze, it <u>IS</u> a user defined Freeze.
FREEZE	[SHIFT] + [FREEZE] (Active in SLO-MO only).	To enter or mark the Freeze time press [SHIFT] + [FREEZE]. The display shows the current freeze time. You can enter the Freeze time using the numeric keypad or MARK the current time into the Freeze time by pressing [MARK]
FREEZE ON LAST GOOD VIDEO	Active in SLO-MO only.	In SLO-MO mode, STILL frame the VTR when the current timecode is within 6 frames of the last Record Out point (memorized automatically upon exiting Record mode). Enable, disable, or clear the FREEZE point from SETUP MENU. (see MENU)
GOTO CUE or ENTERED TIME	[GOTO]	Search the VTR to the contents of the currently displayed Cue Point. If ENTER TIME is active (LED is on), search the VTR to the entered time.  To enter a GOTO location without altering the contents of the Cue Point, Press [ENTER TIME]. Enter the desired timecode number using the numeric keypad. Press [GOTO] to search to the entered time. Press [ESC] to exit without searching.
GANG	[SHIFT] + [VTR#1] OR [SHIFT] + [VTR#2] OR [SHIFT] + [VTR#3] OR [SHIFT] + [VTR#4]	Press and hold the [SHIFT] key and press the key of the VTR whose status you want to monitor. The LED above the VTR# key starts blinking. Release the [SHIFT] key and the VTR key. The light continues blinking. Press the VTR#s for the other VTRs to include in the Gang. Their lights come on and stay on constantly. Press [ESC] to exit.

Function	Key Press	Description
GOTO FREEZE POINT	[SHIFT] + [GOTO]	Search VTR to FREEZE point (last Record Out point).
FFWD	[FFWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
JOG	[JOG]	Select JOG mode and enable the Wheel.
LAST CUE	[LAST CUE]	Step to the previous Cue Point Location.
MARK CUE POINT	[MARK]	Save the current time in the currently displayed Cue Point. Per SETUP MENU, (see MENU Function), the Cue Point Location will advance to the next Cue Point location or remain the same.
NEXT CUE	[NEXT CUE]	Step to the next Cue Point Location.
PREROLL	[PREROLL]	Preroll the VTR to the contents of the currently displayed Cue Point.
PREROLL VALUE	[SHIFT] + [PREROLL]	Enter desired Preroll Value. Press [ENTER] to save entry <b>OR</b> press [ESC] to exit without saving entry.
RECORD	[REC]	Places VTR in the Record mode selected by RECORD MODE in the SETUP MENU. (see MENU) One button record.
REWIND	[RWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
SHUTTLE	[SHUTTLE]	Select SHUTTLE mode and enable the Wheel.
SLOMO	[SLOMO]	Press SLOMO to slo-mo the VTR. Turn the wheel or move the T-Bar to change the play speed. Press SLOMO to STILL frame <b>OR</b> press any transport key to exit.
SLO-MO SPEED PRESET	[SHIFT] + [SLOMO]	For WHEEL ONLY, Press [SHIFT] + [SLOMO] to preset the slo-mo speed. Turn wheel to select desired speed. Press [ESC] or any transport key to exit.
STOP	[STOP]	Press once to STILL frame VTR. Press again to put VTR into STOP mode.
TIME MODE SELECT	[TIME MODE]	Press to toggle between Timecode (TC), VITC (VT) or Tape Timer (TM) display modes.
EJECT TAPE	[SHIFT] + [REWIND]	Eject tape from VTR.
TIME PRESET (Generator Preset)	[SHIFT] + [TIME MODE]	Press to enter Time Preset. Press [ENTER] to load Time Generator with 00:00:00:00 <b>OR</b> enter the time desired via the numerical keypad and press [ENTER] to load that time <b>OR</b> press [ESC] to exit without saving.

## 6. TRANSFERRING CUELIST

The TRANSMIT CUELIST function allows you to transmit your list of Cue Points to a PC, using the provided utility software on the PC, or to another ST300.

### To Transmit Cue Points to the ST300:

1. Connect the VTR 4 connector on the rear of the ST300 to the VTR4 connector of the receiving ST300 using an RS422 9-pin cable with TX and RX lines crossed (A “turnaround” cable.)
2. Press [MENU].
3. Scroll the wheel until “Transmit CUE List? YES=Enter, Exit=ESC” is displayed.
4. Press [ENTER] to start transmitting.  
The Display shows “Waiting to transmit” on the first line.
5. When the Receiver is ready, transfer starts automatically.  
The Display now shows “Transmitting cuelist”.
6. After the transfer is over, the display shows “Transfer is over” for one second and then shows “Waiting to transmit” again.
7. Connect another ST300 to transmit the list again  
**OR**
8. Press [ESC] twice to exit the MENU mode.

### To Transmit Cue Points to the PC:

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using a RS422 to RS232 adapter.
2. Repeat steps 2-8 of the TRANSMIT CUE POINTS to the ST300 section.

## RECEIVE CUELIST FUNCTION.

The RECEIVE CUELIST function allows you to receive your list of Cue Points from a PC or from another ST300.

### To Receive Cue Points from the ST300:

1. Connect the VTR4 connector on the back of the ST300 from the VTR4 connector of the transmitting ST300 using RS422 9-pin cable with TX and RX lines crossed. (A “Turnaround” Cable)
2. Press [MENU].
3. Scroll the wheel until “Receive CUE List? YES=Enter, Exit=ESC” is displayed.
4. Press [ENTER] from start receiving.  
The Display shows “Waiting to receive” on the first line.
5. When the Transmitter is ready, transfer starts automatically.  
The Display now shows “Receiving cuelist”.
6. After the transfer is over the display shows “Done-Success! Press any key...”
7. Press any key. The display shows “Receive cuelist?” message.
8. Press [ESC] to exit the MENU mode.

### To Receive Cue Points from the PC:

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using RS422 to RS232 adapter
2. Repeat steps 2-8 of the RECEIVE CUE POINTS from the ST300 section.

## 7. SPECIFICATIONS

Power	90 VAC to 265VAC adapter supplied with IEC connector		
Size	[L" x W" x H"] 12" x 6" x 1.5" (front) 3.0" (rear) [T-Bar unit is 12.6" wide]		
Weight	4 lbs.		
Real Panel Connectors	VTR1, VTR2, VTR3, VTR4 (All DB9F) GPI (DBF15F) Power (DB9M) Aux (DB9F) Reference Video (BNC)		
Display:	Easy to read 2 line, back-lit LCD display (User adjustable contrast)		
Jog/Shuttle Wheel	With mechanical detents.		
Optional "T"-bar	Slo-mo 0-200% of Play Speed		

### RS422 SERIAL CONNECTOR 9 Pin D type, female (DB9F)

Pin #	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

### POWER CONNECTOR 9 Pin D type, male (DB9M)

Pin #	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	-12 VDC		

### AUX PORT RS422 SERIAL CONNECTOR 9 Pin D type, female

Pin #	1	Frame Ground	6	Transmit Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Receive Common	9	Frame Ground
	5	Spare		

Note: Aux Port is not programmed in this model.

### GPI IN/OUT CONNECTOR 15 Pin D type, female (DB15F)

#### Pin # Description Function

1	GPI 1 Out	PLAY tally out	9	GPI 1 In	PLAY
2	GPI 2 Out	STILL/STOP tally out	10	GPI 2 In	STILL/STOP
3	GPI 3 Out	RECORD tally out	11	GPI 3 In	RECORD
4	GPI 4 Out	REWIND tally out	12	GPI 4 In	REWIND
5	GPI 5 Out	FFWD tally out	13	GPI 5 In	FFWD
6	GPI 6 Out	SLOMO tally out	14	GPI 6 In	SLOMO
7	GPI 7 Out		15	GPI 7 In	
8	Ground				

## ST300 KEY CONFIGURATION

### STANDARD

